

**REMARKS****The Pending Claims:**

Claims 1-5, 11-14, 16-20, 25-35, 38, 74-79 and 109 are pending in the application. Claims 16-20, 25-35, and 38 are withdrawn from consideration. Claim 1-5, 11, 74, 75 and 78 are currently amended.

**The Office Action:**

Claims 1-6, 11-14 and 74-79 are rejected.

Claims 1-6, 11-14, 74 and 75 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard et al. (U.S. Patent No. 5,534,416) in view of Bawendi et al. (U.S. Patent No. 6,306,610).

Claim 76 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Rothbard and Sodroski et al. (U.S. Patent No. 6,761,902).

Claim 77 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Rothbard (U.S. Patent No. 6,306,993).

Claim 78 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Frankel et al. (U.S. Patent No. 5,652,152).

Claim 79 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Barbera-Guillem (U.S. Patent No. 6,194,213).

**The Amendment:**

Claims 1-5 and 78 are currently amended. Claim 109 is newly added. Support for the amendments is found throughout the application, in particular, the original claims as filed, Fig. 17 and description, the Examples, particularly Ex. 7, and page 6, last paragraph, page 9, 3<sup>rd</sup> paragraph, page 20, page 48-55, particularly page 49, 1<sup>st</sup> paragraph, page 57, 2<sup>nd</sup> paragraph, and page 59, 1<sup>st</sup> paragraph of the specification, among others.

The amendments to the claims are made solely to obtain expeditious allowance of the instant application. Amendment of the claims is made without prejudice, without intent to abandon any originally claimed subject matter, and without intent to acquiesce in any rejection of record. Applicant expressly reserves the right to file one or more continuing applications hereof containing the canceled or unamended claims.

Entry of the claim amendments is respectfully requested.

Rejection under 35 U.S.C. § 103(a):

I. Claims 1-6, 11-14, 74 and 75 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard et al. (U.S. Patent No. 5,534,416) in view of Bawendi et al. (U.S. Patent No. 6,306,610). In view of the following, Applicants respectfully traverse this rejection.

Millard describes organic cyanine dyes that are able to differentially label live and dead cells (i.e. determine viability) based on fluorogenic properties of one of the cyanine dyes. Notably, in Millard, fluorescence of one of two Dyes (DYE II) is affected by viability of the cell. Col. 13.

According to the Office Action, “[i]t would have been obvious for one of ordinary skills in the art to replace one of the fluorescent dyes in Millard with semiconductor nanocrystals of Bawendi because nanocrystals exhibit high fluorescent intensity...” While nanocrystals in Bawendi may exhibit certain desirable properties, supplanting a dye in Millard with a nanocrystal in Bawendi does not result in the composition as presently claimed, nor would it have been obvious based on the teachings in the cited references.

The present claims are directed to separately detectable cells, which are encoded by semiconductor nanocrystals. Millard is based detection of live or dead cells by a fluorogenic response of DYE II to cell viability. Each cell in Millard effectively includes the same dye population it is simply the fluorescent response of DYE II to live/dead cells that results in viability detection. Substituting DYE II with a semiconductor nanocrystal of Bawendi, would preclude viability detection thereby destroying Millard’s intended purpose and lead to cells that are not separately detectable. Substituting DYE I in Millard with a semiconductor nanocrystal would lead to a population of cells that are not encoded by semiconductor nanocrystals. Supplanting both of the dyes in Millard with the nanocrystals in Bawendi would result in a non-encoded cell population that could not detect cell viability. In all scenarios, the present claim limitations are not met and/or Millard is rendered inoperable for its intended purpose.

A recent Supreme Court decision has warned that “[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning.” KSR Intern. Co. v. Teleflex Inc. U.S. 2007 (2007 WL

1237837 (U.S.), at 16, citing *Graham*, 393 U.S., at 36. As explained by the Court of Appeals for the Federal Circuit and the MPEP: If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). MPEP 2143.01.

Since all of the limitations of the present claims are not met by the combination of Millard and Bawendi, which together are describing much different compositions from the present claims, it is respectfully requested that the obviousness rejection be withdrawn.

II. Claim 77 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Rothbard (U.S. Patent No. 6,306,993). Applicants respectfully traverse this rejection.

As described above, Millard and Bawendi do not describe separately detectable cells, which are encoded by semiconductor nanocrystals. Rothbard fails to cure Millard and Bawendi's deficiencies. Accordingly the obviousness rejection to claim 77 is improper and should be withdrawn.

III. Claim 76 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Rothbard and Sodroski et al. (U.S. Patent No. 6,761,902). As described above, the combination of Millard and Bawendi does not render claim 1 obvious. Sodroski does not cure the deficiencies. Therefore, Applicants believe that this rejection has been traversed and should be withdrawn.

IV. Claim 78 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Frankel et al. (U.S. Patent No. 5,652,152). Applicants believe this rejection has been rendered moot by way of the above-comments and the fact that Frankel is based on the Tat-sequence which is not present in amended claim 78.

V. Claim 79 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Millard in view of Bawendi as applied to claim 1, and further in view of Barbera-Guillem (U.S. Patent No. 6,194,213). As described above, the combination of Millard and Bawendi does not render claim 1 obvious. Barbera-Guillem does not cure the deficiencies. Accordingly, Applicants believe that this rejection has been traversed and should be withdrawn.

**CONCLUSION**

In view of the above amendments and remarks, it is submitted that this application is now ready for allowance. Early notice to this effect is solicited. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned agent at (541) 335-0165.

Respectfully submitted,

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